



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,097	05/30/2006	Mitsuru Ueda	36856.1440	1870

54066 7590 03/23/2010  
MURATA MANUFACTURING COMPANY, LTD.  
C/O KEATING & BENNETT, LLP  
1800 Alexander Bell Drive  
SUITE 200  
Reston, VA 20191

EXAMINER
----------

CHEN, XIAOLIANG

ART UNIT	PAPER NUMBER
----------	--------------

2841

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

03/23/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JKEATING@KBIPLAW.COM  
uspto@kbiplaw.com  
cbennett@kbiplaw.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/596,097	<b>Applicant(s)</b> UEDA ET AL.	
	<b>Examiner</b> Xiaoliang Chen	<b>Art Unit</b> 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 14-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>01-26-09</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 02-26-10 has been entered.

### ***Amendment***

2. Acknowledgement is made of Amendment filed 02-26-10.
3. Claims 14, 15, 17, 18 and 20 are amended.
4. Claims 1-13 and 21 are canceled.

### ***Response to Arguments***

5. Applicant's arguments with respect to claim 14 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2841

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claim 17 is rejected** under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17, recites the limitations of “a ceramic sheet” and “a conductive material”, since there are the limitations of “a ceramic sheet” and “a conductive material” already in the independent claim 14, It is not clear whether the 2<sup>nd</sup> time of “a ceramic sheet” and “a conductive material” are the same as, or different from the first ones.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2841

10. Claims 14-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (US20010026435) in view of Murai et al. (SU6285116) and Alcoe (US7087846).

**Re Claim 14**, Sakai show and disclose

A manufacturing method for a laminated ceramic electronic component, comprising the steps of:

screen printing (screen printing [0021]) a coil conductor pattern (line conductor 26, fig. 2) having a first land (29, fig. 2) at one end of the coil conductor pattern (left end of 26, fig. 2) and a second land (29, fig. 1) at the other end of the coil conductor pattern (right end of 26, fig. 2) on the surface of a ceramic sheet (the ceramic sheet [0017]) having a hole (hole for 25, fig. 1) for a via hole (via hole 25, fig 2) formed therein by using a conductive material (the conductive paste is filled into the through-hole [0025]) such that the first land covers the hole for via hole (fig. 1);

filling the conductive material in the hole for the via hole (the conductive paste is filled into the through-hole [0025]); and laminating a plurality of ceramic sheets (the ceramic sheets are laminated together [0017]) such that the first land in one of the plurality of ceramic sheets is electrically connected to the second land in another of the plurality of ceramic sheets through the via hole formed in the one of the plurality of ceramic sheets (the connecting land is positioned at an end of the line conductor, i.e., the end of the line conductor is connected to the via-hole conductor [0037], fig. 2) to obtain a laminate (the ceramic green sheets are laminated together [0017]);

Art Unit: 2841

an area of the via hole is less than area of the first land and an area of the second land (connecting land having a diameter greater than the diameter of the via-hole conductor [ABSTRACT]);

Sakai does not disclose

1) simultaneously filling the conductive material in the hole during the step of screen printing the coil conductor pattern;

2) the area of the second land is larger than the area of the first land.

Murai et al. teaches a device wherein

1) simultaneously filling the conductive material in the hole during the step of screen printing the coil conductor pattern (the Ag/Pd paste is embedded in the through hole simultaneously with the screen printing of the coil pattern [col. 5, line 47]);

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to simultaneously filling the conductive material in the hole while screen printing the coil conductor pattern as taught by Murai et al. in the electronic device of Sakai, in order to simplify and speed up the process of the electronic device.

Alcoe teaches a device wherein

2) the area of the second land (25, fig 1-1A) is larger than the area of the first land (29, fig. 1-1A).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a larger second land for a

Art Unit: 2841

conductor as taught by Alcoe in the electronic device of Sakai, in order to connect to larger size via hole, and in order to be able to allow slight variations in alignment of the via with the land when the layers laminated together.

**Re Claim 15, Sakai show and disclose**

The manufacturing method for a laminated ceramic electronic component according to Claim 14, wherein the second land extends from a projection plane of the first land to a projection plane of the coil conductor pattern (both lands projected from two ends of 26 the coil conductor pattern, fig. 1-2);

**Re Claim 16, Sakai and Alcoe disclose**

The manufacturing method for a laminated ceramic electronic component according to Claim 14, wherein the area of the second land is about 1.10 to about 2.25 times as wide as the area of the first land (fig. 2, Alcoe).

**Re Claim 17, Sakai shoe and disclose**

The manufacturing method for a laminated ceramic electronic component according to Claim 14,

wherein the coil conductor pattern is printed (by printing, a line conductor is formed [0016]) on the ceramic sheet (the ceramic sheet [0017]) having the hole (hole of 25, fig. 1) for the via hole (via hole of 25, fig 2) formed therein and the hole for the via hole is filled with a conductive material (the conductive paste is filled into the through-hole [0025]),

Sakai does not disclose

Art Unit: 2841

the printing and filling without providing a carrier film on a back surface of the ceramic sheet;

Murai et al. teaches a device wherein

the printing and filling (the Ag/Pd paste is embedded in the through hole simultaneously with the screen printing of the coil pattern [col. 5, line 47]) without providing a carrier film on a back surface of the ceramic sheet;

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to simultaneously filling the conductive material in the hole while screen printing the coil conductor pattern without using a carrier film as taught by Murai et al. in the electronic device of Sakai, in order to simplify the printing and filling processes and reduce the cost of the electronic device.

**Re Claim 18**, Sakai and Alcoe disclose

The manufacturing method for a laminated ceramic electronic component according to Claim 14, arranging the coil conductors on the plurality of ceramic sheets (the ceramic sheet [0017], fig. 2),

Sakai does not disclose

arranging the coil conductors on the plurality of ceramic sheets so as to define a spiral coil.

Murai et al. teaches a device wherein

arranging the internal conductors on the plurality of ceramic sheets so as to define a spiral coil (spiral coil, fig. 6).



Art Unit: 2841

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the spiral coil conductor pattern as taught by Murai et al. in the electronic device of Sakai, in order to form and define the shape of a spiral, or a loop coil conductor inside the laminated device (Murai et al., col. 2, line 4).

**Re Claim 19**, Sakai show and disclose

The manufacturing method for a laminated ceramic electronic component according to Claim 18, wherein terminal ends of the spiral coil define lead-out electrodes (27 fig. 2);

**Re Claim 20**, Sakai and Alcoe disclose

The manufacturing method for a laminated ceramic electronic component according to Claim 14,  
Sakai does not disclose

providing two additional ceramic sheets which do not include any internal conductors printed therein; disposing one of the two additional ceramic sheets on an upper surface of the laminate; and disposing the other of the two additional ceramic sheets on a lower surface of the laminate.

Murai et al. teaches a device wherein

providing two additional ceramic sheets (top and bottom sheets, fig. 6) which do not include any internal conductors printed therein (fig. 6); disposing one of the two additional ceramic sheets on an upper surface of the laminate

Art Unit: 2841

(top, fig. 6; and disposing the other of the two additional ceramic sheets on a lower surface of the laminate (bottom, fig. 6).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the additional ceramic sheets on the top and bottom as taught by Murai et al. in the electronic device of Sakai, in order to provide the external extension electrodes and the covering protection for the laminated electronic device.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US-20050040905 US-20040227666 US-3812442 US-4465727 US-20030011999 US-6159322 US-5838069 US-5331204 US-5315485 US-6132543 US-6448863 US-6444066.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiaoliang Chen whose telephone number is (571)272-9079. The examiner can normally be reached on 8:00-5:00 (EST), Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinhee Lee can be reached on 571-272-1977. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xiaoliang Chen/  
Examiner, Art Unit 2841

Xiaoliang Chen  
Examiner  
Art Unit 2841